REMARKS

Claim Rejected under 35 U.S.C. 103(a)

The Examiner has maintained his rejection of Claims 1-7 as being obvious over Kuypers, U.S. Patent No 5,753,795, in view of Foley, U.S. Patent No. 3,767,925.

In response to Applicant's argument presented in their response of October 28, 2008, the Examiner has stated:

> "4. The examiner disgarees.
> The combination of Kuypers and Foley discloses in the rejection below a demountable vacuum-sealing plate (removable insert assembly) having an ion source, a mass analyzer, an ion detector, an ion entrance port, and ion optics, which one of ordinary skill recognizes would include at least three apertured vacuum partitions, since they are commonly required for such components to normally operate at their required vacuum levels or stages, as taught in Foley at Col. 2, line 19-29.
> Kuypers also discloses at Col. 2, line 45-50; and Col 4, line 44-56 that alternate embodiments of the invention may have additional components, such as a gas chromatograph column mounted to the mass spectrometer assembly, which one of ordinary skill recognizes would require an additional apertured vacuum partition."

Applicant respectfully traverses the Examiner's rejection. The Examiner is incorrect that one of ordinary skill would recognize that the demountable vacuum sealing plate of Kuypers would include apertured vacuum partitions, because each of the vacuum components, including the electron impact ion source, mass analyzer, ion detector, ion entrance port and ion optics, of Kuypers each operates very well at the same vacuum level provided by the one vacuum stage of the Kuypers apparatus The reason for this is that the Kuypers apparatus is a GC/MS configuration, which has no external gas load other than the GC effluent, which is fed directly into the ion source in vacuum However, this GC effluent presents a gas flow low enough to be accommodated by the one vacuum pump while maintaining adequate vacuum for operation of all of the other vacuum components mentioned previously Hence, the Examiner is further incorrect when he states that the skilled person would recognize that the GC column mounted to the mass spectrometer assembly would require an additional apertured vacuum partition, because, in fact, no additional vacuum partition is required.

The Foley reference is not relevant either. Foley describes apparatus in vacuum for which different components require different vacuum levels for operation. Therefore, Foley provides vacuum partitions between vacuum stages so that the different vacuum

levels can be maintained. However, the vacuum partitions of Foley are fixed in place. Foley does not teach or suggest their removal as part of a vacuum insert assembly.

Hence, Applicant maintains that the combination of Kuypers and Foley does not describe a removable assembly that contains vacuum partitions between vacuum stages, in contrast to the subject invention.

The Examiner further states:

> "In addition, the applicants disclosure at page 2 of the specification states; commercially available API sources from mass spectrometer (MS) manufacturers, including Perkin-Elmer Sciex and Finnigan, were designed for increased user convenience in maintenance of API sources. These API mass spectrometer systems which include two to three vacuum stages have assemblies that plug into the front of the instrument or swing open via a hinged joint These commercially available removable assemblies include no more than two vacuum partitions and the ion guide assemblies included in these instruments are only removable as separate assemblies
>
> One of ordinary skill would thus recognize from the above that the prior art discloses mass spectrometer systems having removable mass spectrometer assemblies having plural vacuum partitions
>
> Therefore one of ordinary skill in the art would expect modifying a prior art removable mass spectrometer assembly with additional (third) vacuum partitions, to be no more than the predictable use of prior art elements according to their established functions.
>
> 5 The rejection of claims 1-7, under 35 USC 103(a) are maintained.
>
> 6 All claims stand finally rejected."

In response, Applicant submits that removable vacuum partition assemblies having more than three vacuum stages become increasingly more complicated to configure while ensuring the corresponding increase in vacuum differentials between the first and last stages of such an assembly, and while providing automatic disconnect of electrical connections, as well as the incorporation of ion optical components such as ion guides, as provided by the subject invention. Therefore, because such assemblies were not previously described or suggested, nor have they been available by manufacturers with more than two vacuum partitions, Applicant maintains that such assemblies having three or more vacuum stage partitions are patentably distinguishable from the prior art.

In order to more clearly distinguish the subject invention from prior art, Applicant has amended Claim 1 as follows:

1. An apparatus comprising:

   a. an atmospheric pressure ion source for producing ions for delivery

into vacuum;

b. a vacuum system housing attached to means for pumping away gas to form said vacuum; and,

c. a removable insert assembly which includes at least three vacuum pumping stage partitions for maintaining ~~three~~ at least four vacuum stages in said apparatus when said insert assembly is inserted into said vacuum system housing; and

d. at least one ion guide configured as part of said removable insert assembly

As described in the subject application, no prior art removable vacuum assembly having removable vacuum partitions is provided nor is mentioned or described which also includes an ion guide as part of the removable assembly Hence, Applicant maintains that Claim 1, especially as amended above, is patentably distinguishable from all prior art

Claims 2-7 is dependent on Claim 1, and so are also patentably distinguishable from all prior art as well at least for the same reasons as Claim 1.

In light of the above argument and amendment, Applicant believes that the application is now in condition for allowance.

Respectfully submitted,

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